

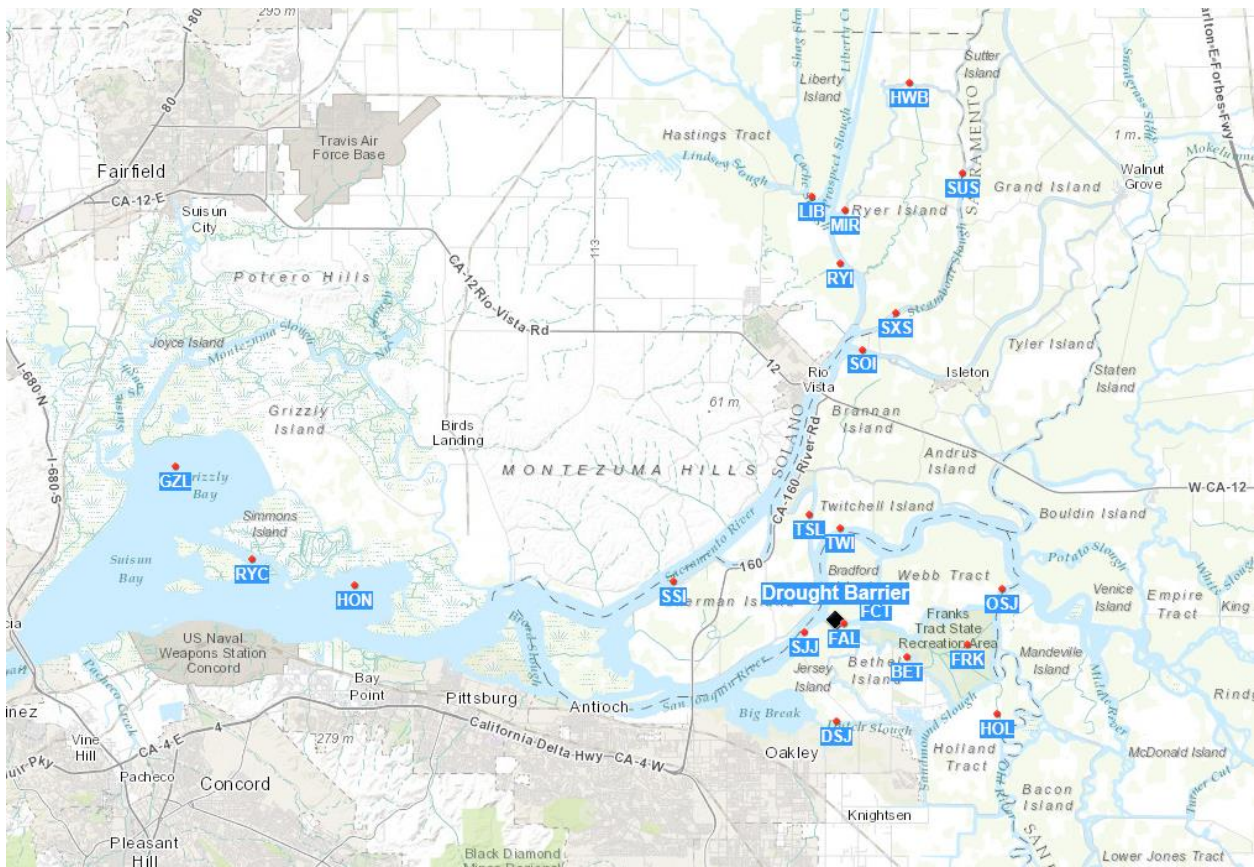
Emergency Drought Barrier Water Quality Monitoring Summary¹

Weekly Update for October 5 through October 11, 2015

Below is a summary of water quality, flow, and velocity data since the hydraulic closure of the Emergency Drought Barrier (EDB) at West False River on May 28, 2015, with emphasis on trends observed during the past week. The EDB rock placement was completed on June 12, 2015. On October 1, 2015, the contractor began breaching the EDB, allowing tidal flows to resume passing through the False River channel. As of last Friday, October 9, 2015, about 30% of the barrier has been removed. The removal will be completed by November 15, 2015.

For additional water quality monitoring data, access the network of CDEC stations at the following link:

<http://dwr.maps.arcgis.com/apps/Viewer/index.html?appid=3be5e0bbe0994b76883b0567f4f6b9e3>

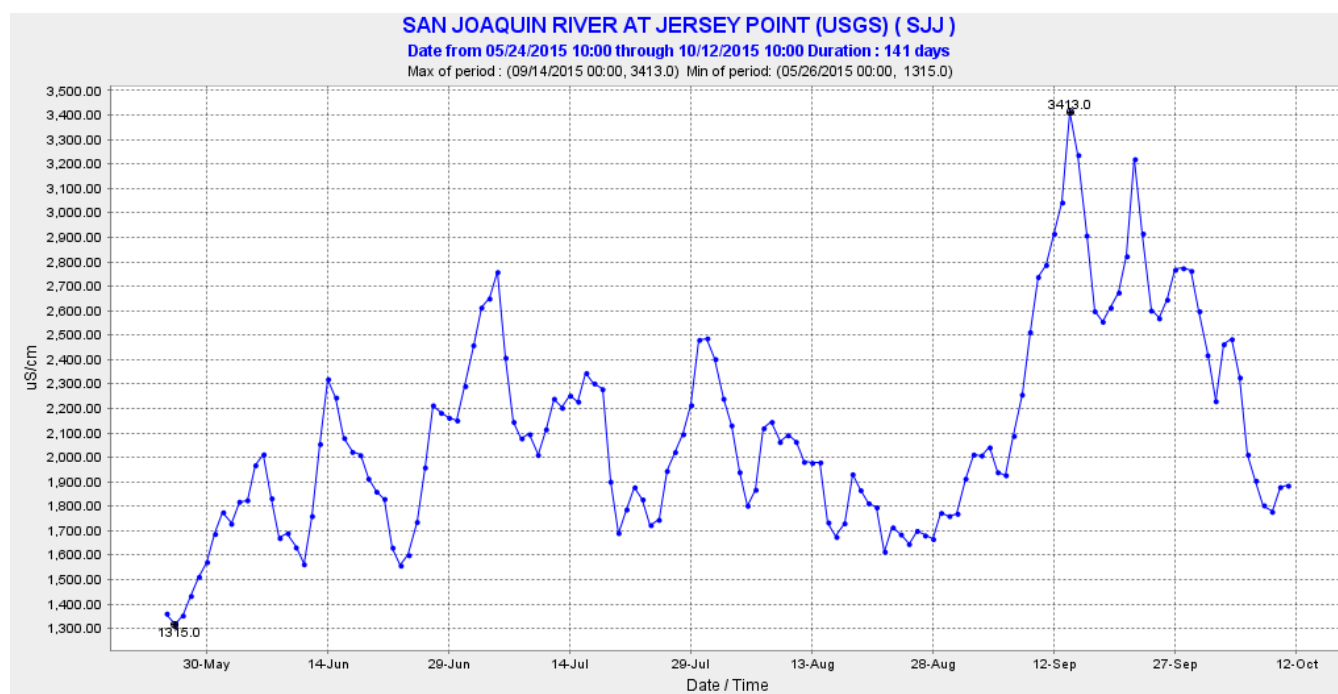
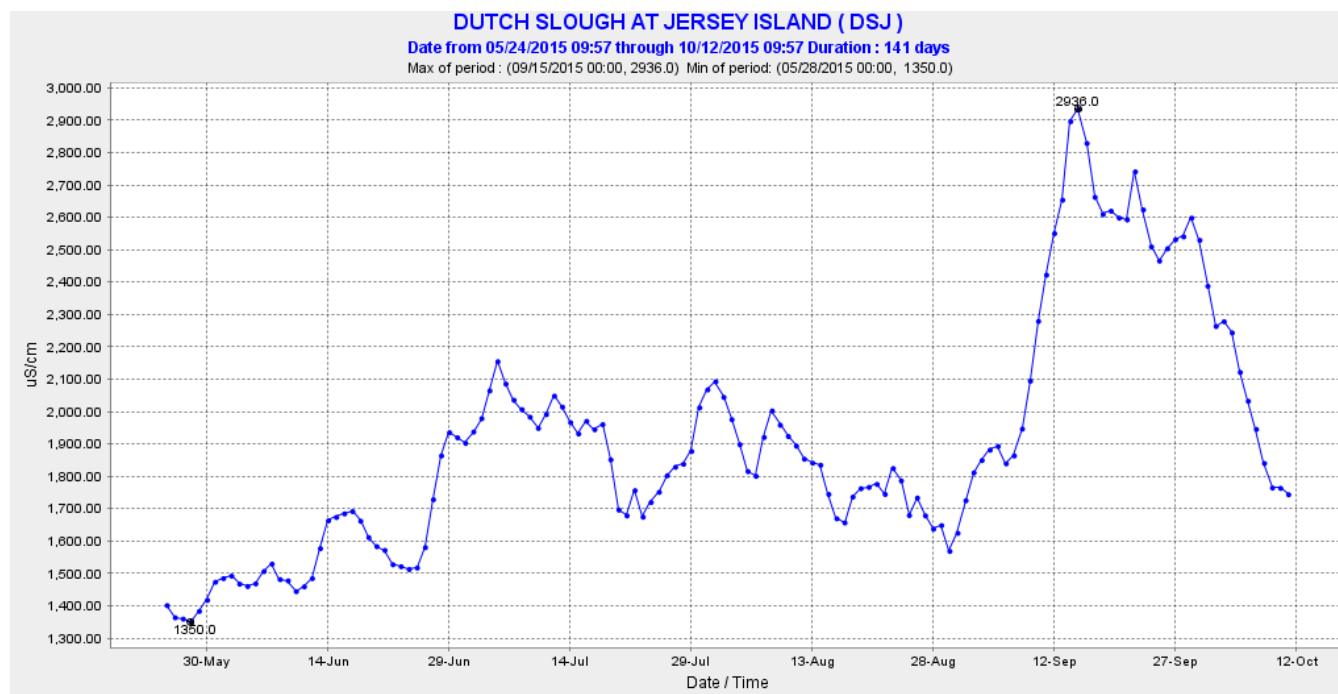


¹ All data in this report and subsequent weekly reports posted to California Data Exchange Network (CDEC) are preliminary and have not yet been validated.

Specific Conductivity

During the past week, average daily specific conductivity (EC) levels decreased sharply—approximately 20% at Dutch Slough at Jersey Island (DSL), San Joaquin River at Jersey Point (SJJ), and Fisherman's Cut (FCT); while EC dropped less precipitously at False River (FAL) from a high of 1,726 $\mu\text{S}/\text{cm}$ since EDB installation to about 1,560 $\mu\text{S}/\text{cm}$ on October 11, 2015. At Holland Cut (HOL) average daily EC increased from 735 $\mu\text{S}/\text{cm}$ on October 4, 2015 to 815 $\mu\text{S}/\text{cm}$ on October 11, 2015.

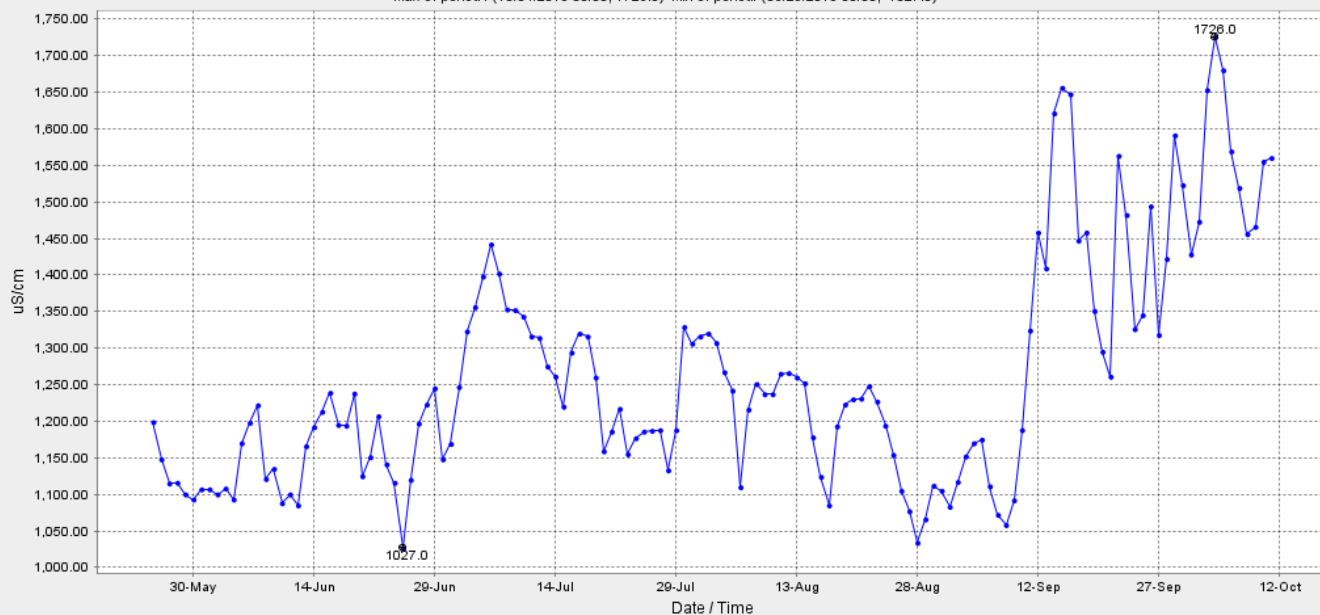
Daily average EC values for five stations in the vicinity of the EDB:



FALSE RIVER (FAL)

Date from 05/24/2015 10:21 through 10/12/2015 10:21 Duration : 141 days

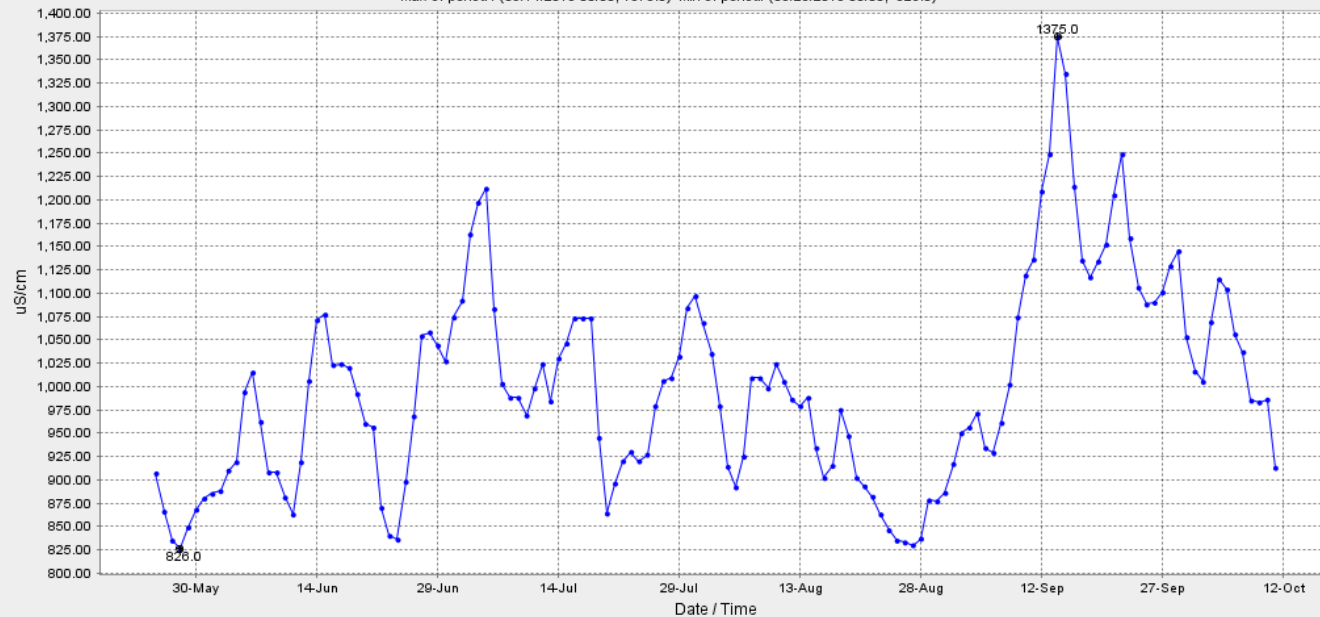
Max of period : (10/04/2015 00:00, 1726.0) Min of period : (06/25/2015 00:00, 1027.0)

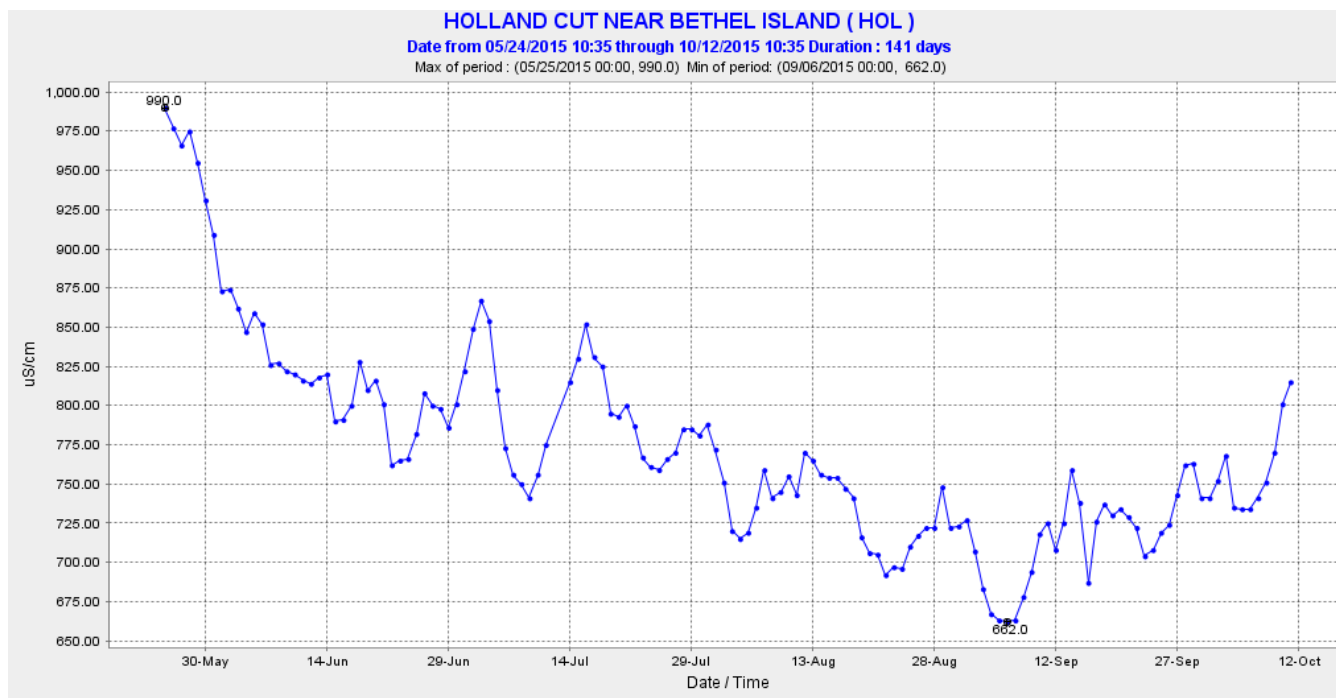


FISHERMANS CUT (FCT)

Date from 05/24/2015 10:30 through 10/12/2015 10:30 Duration : 141 days

Max of period : (09/14/2015 00:00, 1375.0) Min of period : (05/28/2015 00:00, 826.0)





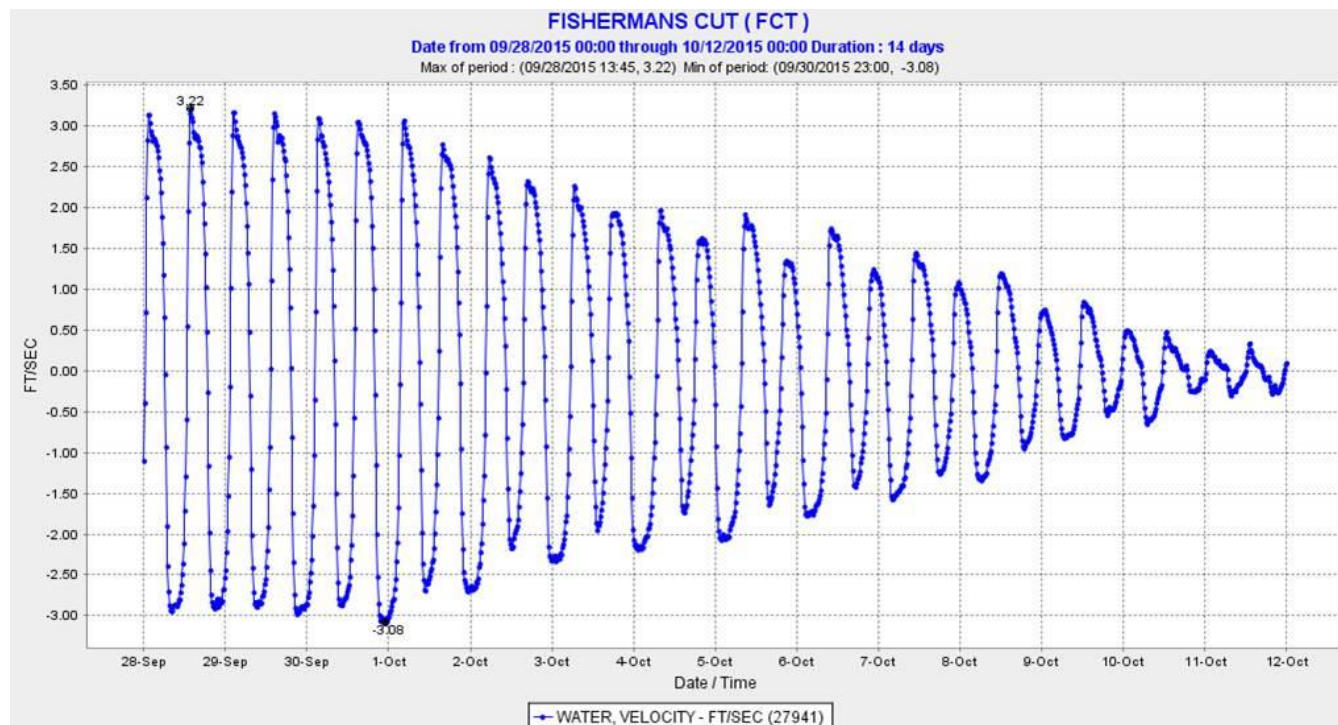
Flow and Velocity

Peak water velocities at the FCT flow station for the week of October 4 – 11, 2015 varied between +1.97 ft/s (10/4/15 at 08:00) and – 2.19 ft/s (10/4/15 at 01:15). While the barrier is in place, positive water velocities measured at this station refer to water flowing into Fisherman’s Cut southward from the San Joaquin River. Thus, last week’s peak water velocity of -2.19 ft/s occurred during an ebb tide. Flows varied between +7,447 cfs 10/4/15 at 08:00) and –9,122 cfs (10/4/15 at 00:45) indicating a higher peak flow during an ebb tide. The False River barrier was breached on October 1 resulting in a corresponding drop in water velocities and flow rates. By the end of last week, peak water velocities ranged between +0.50 ft/s and -0.70 ft/s while peak flows ranged between +2,000 cfs and -2,500 cfs. In the following weeks, peak water velocities and peak flow rates will continue to drop as the barrier is removed.

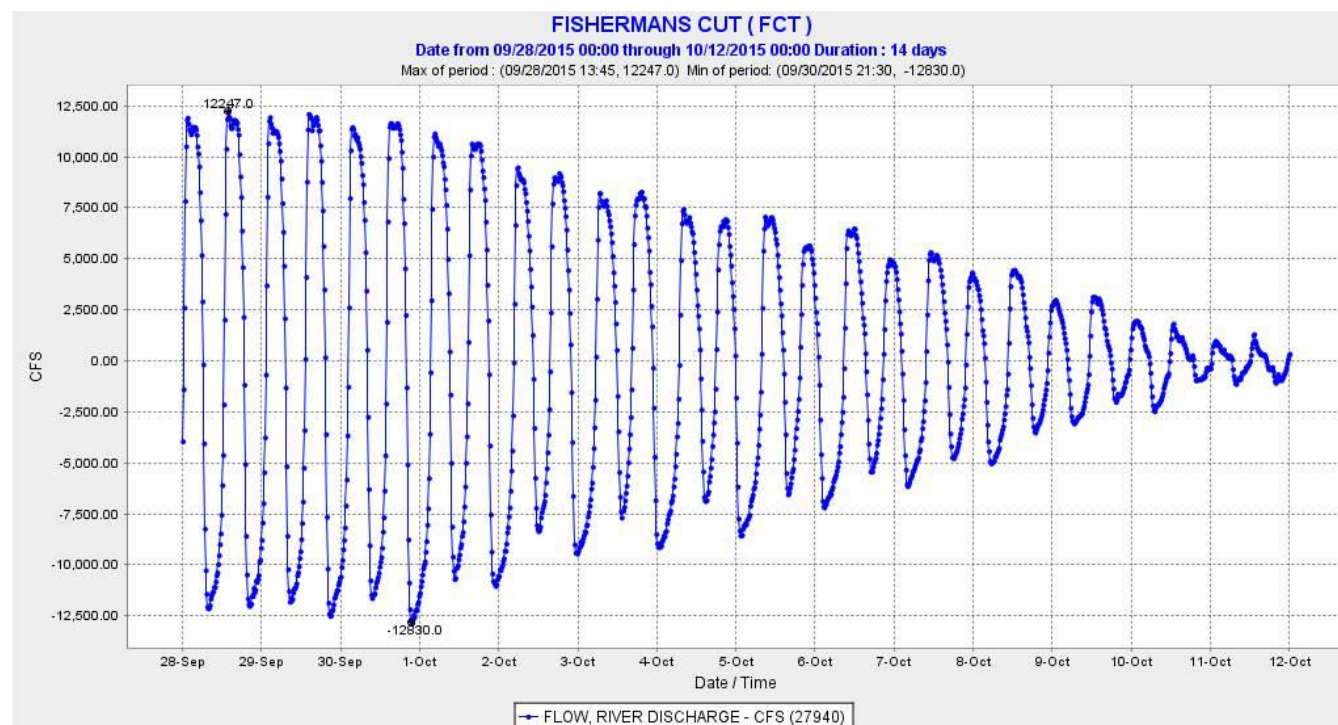
All data will be validated and reported to the Water Data Library. Below are the velocity and flow plots for the last 2-weeks of data, which shows the magnitude of the drop in flow rates since barrier removal commenced.

USGS resumed flow and velocity measurements at the False River (FAL) station on October 5, 2015, at 0100. Per USGS staff, flow and velocity measurements are ballpark magnitude in accuracy until complete removal of the barrier.

15-Minute velocities for FCT in the vicinity of the emergency drought barrier:



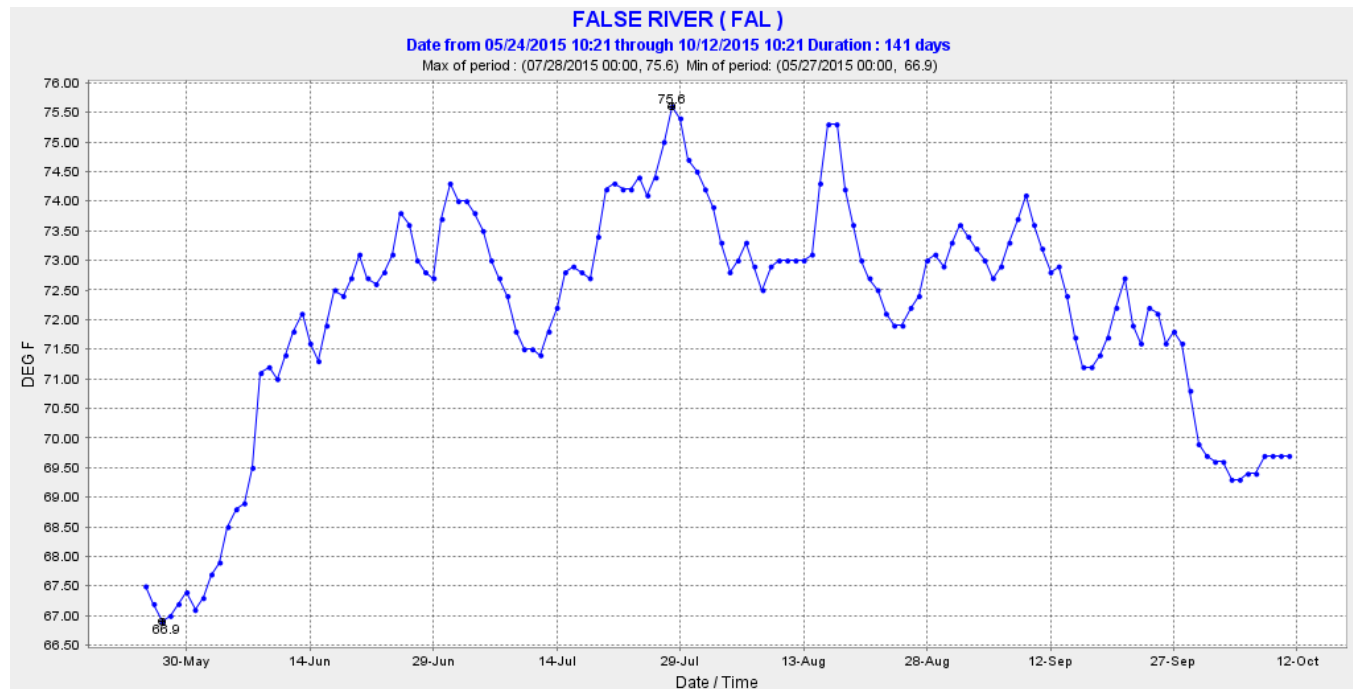
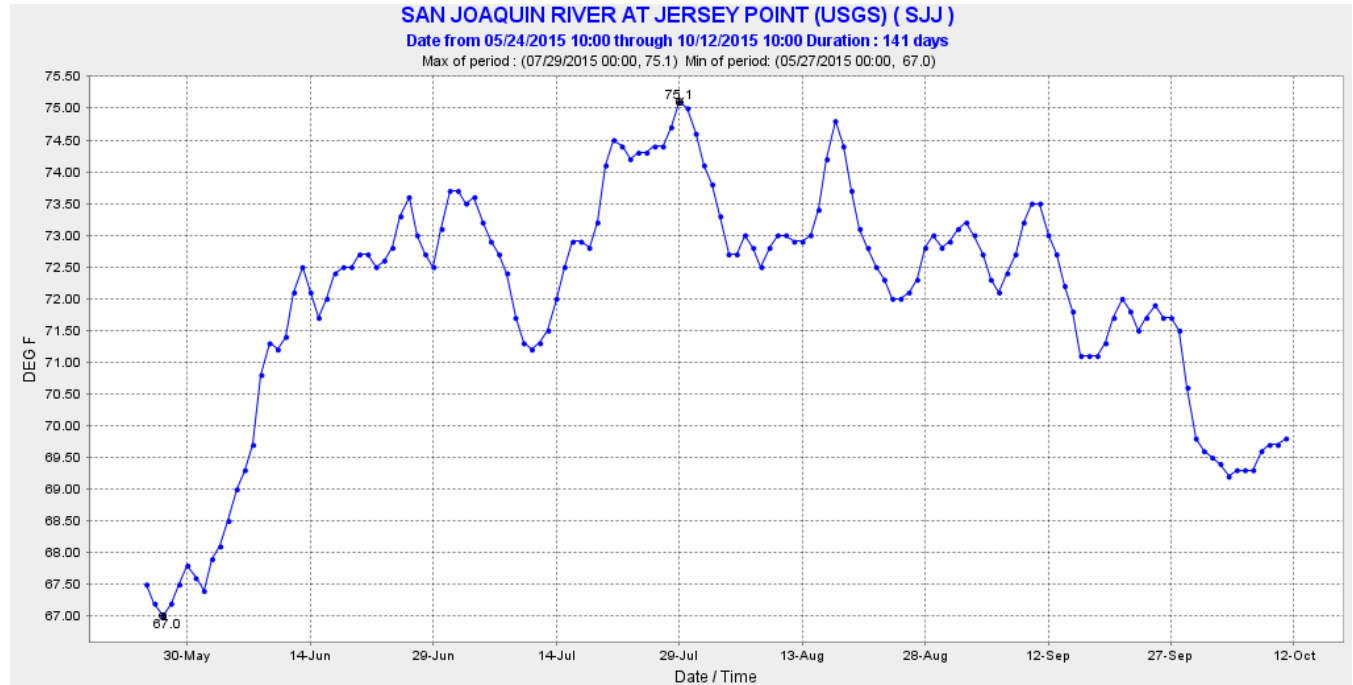
15-Minute flows for FCT in the vicinity of the emergency drought barrier:



Water Temperatures

During the past week, average daily water temperature increased slightly at SJJ and FAL, increasing by about 0.5 °F. at each station.

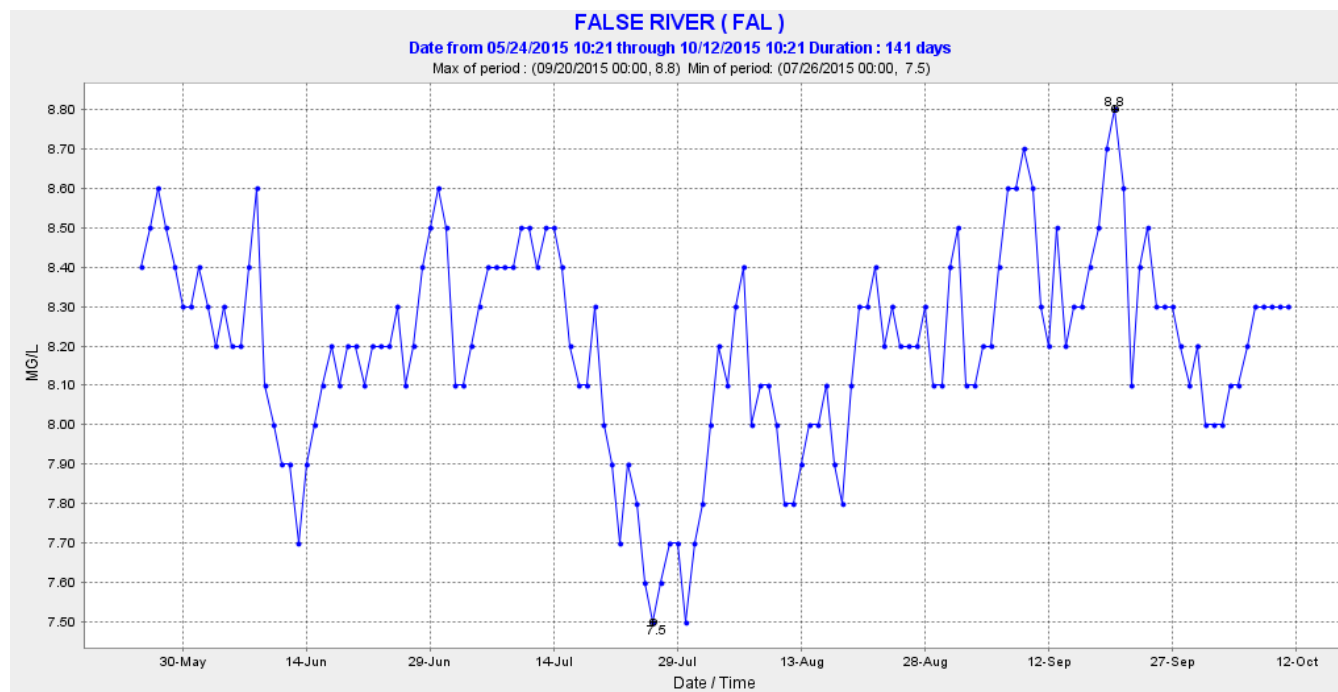
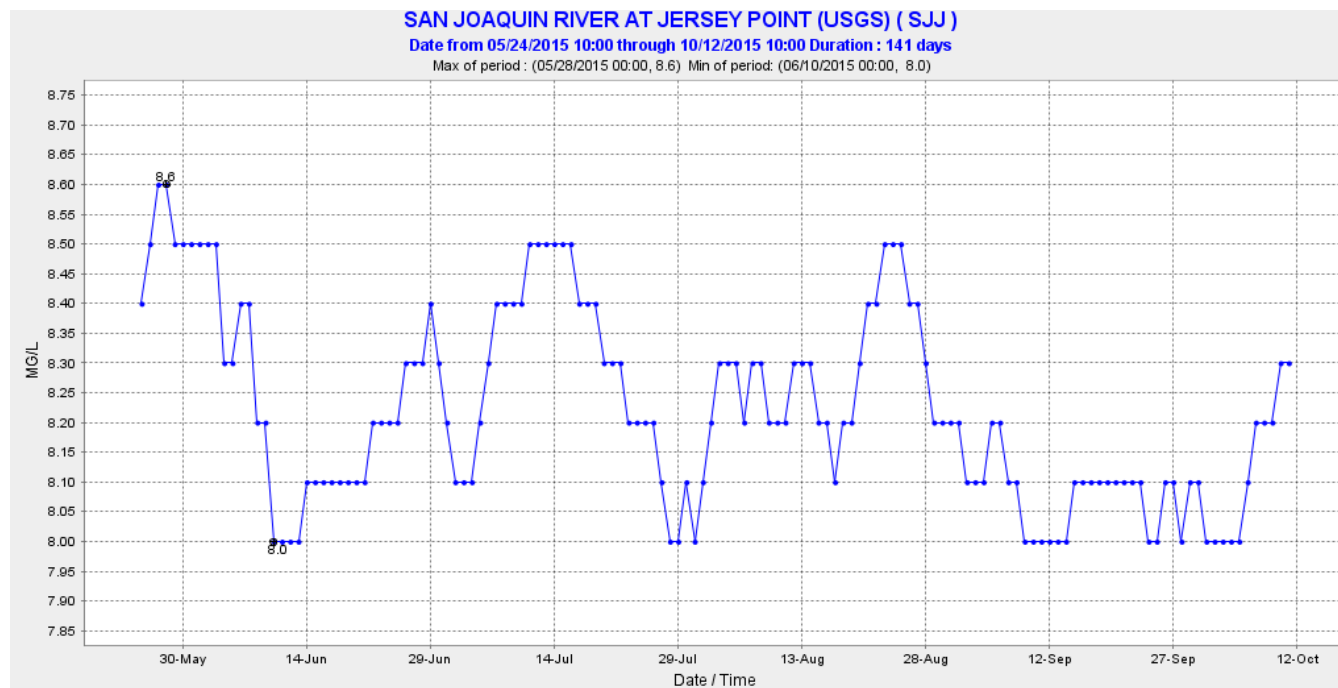
Daily average temperature for stations immediately upstream and downstream of the EDB:



Dissolved Oxygen

Average daily dissolved oxygen (DO) increased both at SJJ and FAL during the week. Average daily DO is greater than 8.2 mg/L at each station. Minimum DO levels exhibited an upward trend at both stations. DO remains well above the 5.0 mg/l water quality criterion for aquatic life, as it has since the barrier was installed.

Daily average DO for stations immediately upstream and downstream of the EDB:

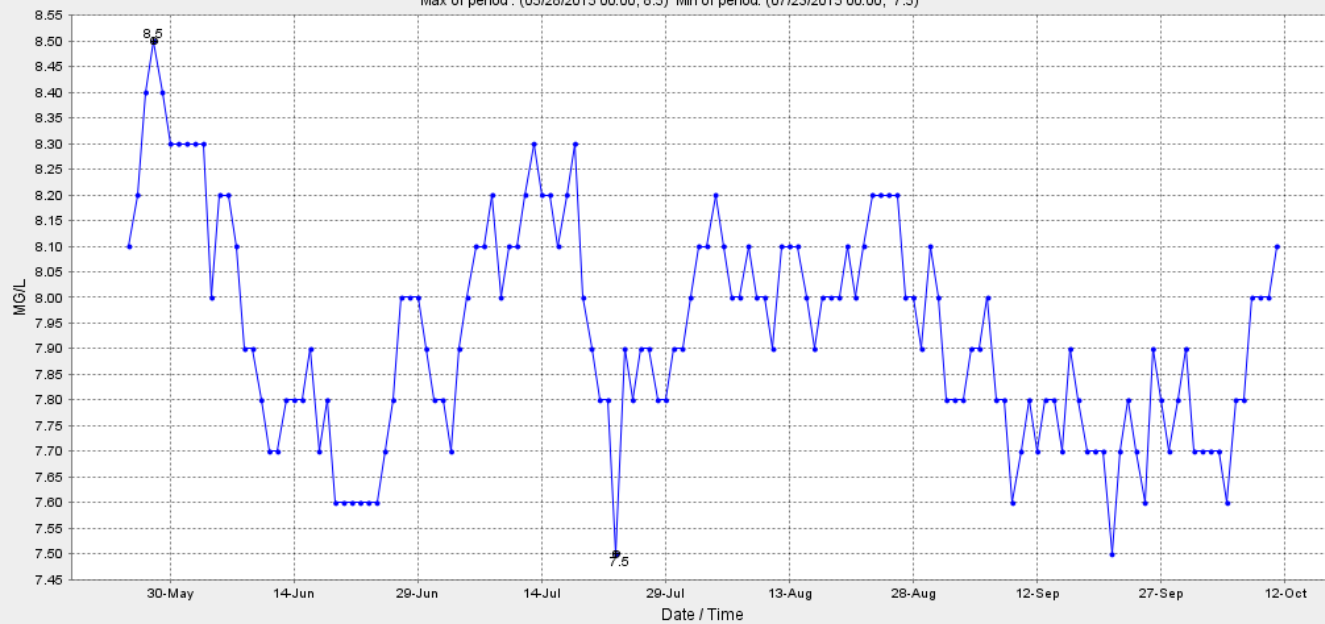


Daily minimum DO for stations immediately upstream and downstream of the EDB:

SAN JOAQUIN RIVER AT JERSEY POINT (USGS) (SJJ)

Date from 05/24/2015 10:00 through 10/12/2015 10:00 Duration : 141 days

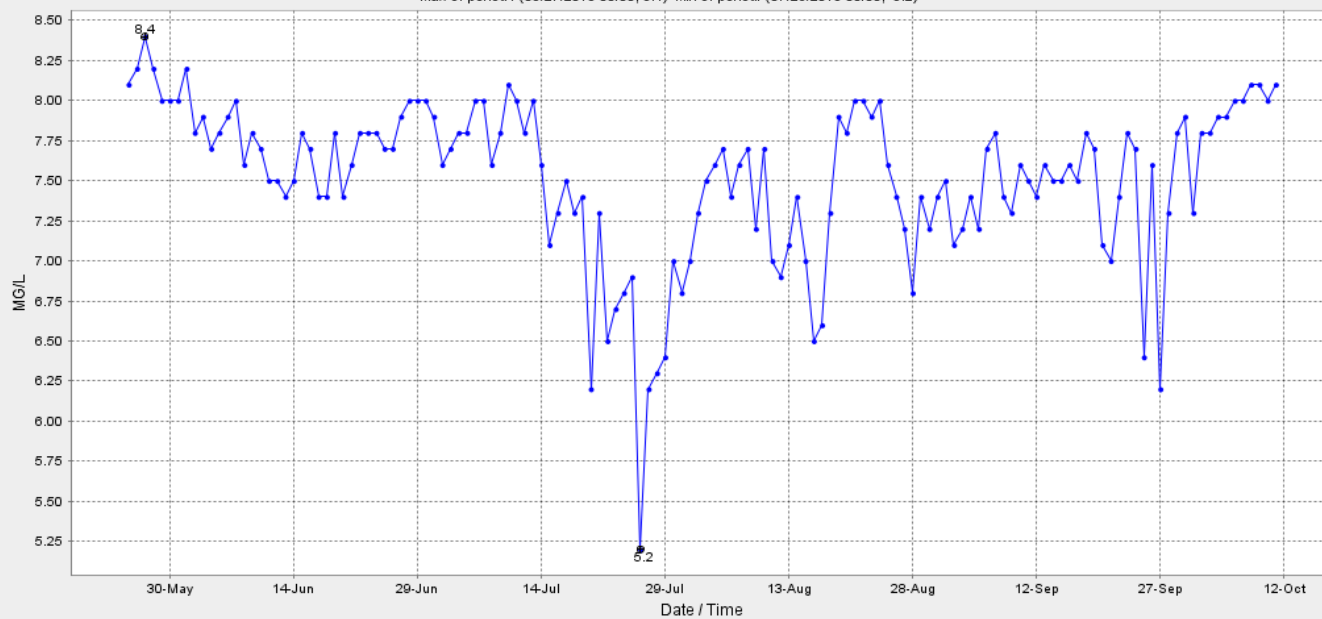
Max of period : (05/28/2015 00:00, 8.5) Min of period: (07/23/2015 00:00, 7.5)



FALSE RIVER (FAL)

Date from 05/24/2015 10:21 through 10/12/2015 10:21 Duration : 141 days

Max of period : (05/27/2015 00:00, 8.4) Min of period: (07/26/2015 00:00, 5.2)



Below is a summary of EC data ($\mu\text{S}/\text{cm}$) by station for the period of October 5, 2015 through October 11, 2015.

Note: About 24 hours of SUS data from October 6-7 failed to transmit through CDEC during the past week; thus the summary statistics may not adequately represent this station for the period.

Station	Mean	Median	Minimum	Maximum	Area
Suisun Bay - Cutoff near Ryer (RYC)	20276	20448.5	16294	23577	Grizzly Bay to Lower Sac River
Grizzly Bay (GZL)	21531	21503	20066	23147	
Honker Bay (HON)	17612	17732.5	13874	21348	
Sacramento River near Sherman Island (SSI)	5671	5620.5	2095	10288	
Dutch Slough @ Jersey Island (DSJ)	1895	1870	1490	2750	Dutch Slough
San Joaquin River @ Jersey Point (SJJ)	1950	1730	1080	4280	Vicinity of EDB
Three Mile Slough at San Joaquin River (TSL)	1899	1760	936	4900	
San Joaquin River @ Twitchell Island (TWI)	1232	1238	596	2765	
Fisherman's Cut (FCT)	1011	1026	566	1838	
False River (FAL)	1547	1470	1010	2980	
Bethel Island near Piper Slough (BET)	1067	1068	0	1226	Frank's Tract
Franks Tract Mid (FRK)	941	932	904	1003	
Old River near Frank's Tract near Terminous (OSJ)	597	592	491	747	
Holland Cut near Bethel Island (HOL)	763	745	689	938	
Sacramento River downstream of Isleton (SOI)	315	328.5	157	976	North Delta/Cache Slough
Steamboat Slough near Sacramento River (SXS)	197	174	154	449	
Cache Slough @ Ryer Island (RYI)	229	226	204	332	
Liberty Island @ Approx Cntr S End (LIB)	219	223	3	264	
Miner Slough (MIR)	185	173.5	157	282	
Steamboat Slough downstream of Sutter Slough (SUS)	159	159	153	167	
Miner Slough @ HWY 84 Bridge (HWP)	158	158	152	165	

Below is the mean specific conductance ($\mu\text{S}/\text{cm}$) for the period of October 5, 2015 through October 11, 2015.

Means from RYC and GZL are much greater and thus are not shown due to scaling issues.

